

THW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Re: Application of: Greg A. Whyatt et al.

Application No.: 10/551,516

Filed: September 28, 2005

Confirmation No.: 6020

For: RAPID START FUEL REFORMING
SYSTEMS AND TECHNIQUES

Examiner: To be assigned

Art Unit: 1764

Attorney Reference No.: 23-70766-04

CERTIFICATE OF MAILING

I hereby certify that this paper and the documents referred to as being attached or enclosed herewith are being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: COMMISSIONER FOR PATENTS, P.O. BOX 1450, ALEXANDRIA, VA 22313-1450 on the date shown below.

Attorney or Agent
for Applicant(s)

Wayne W. Rupert

Date Mailed May 30, 2006

COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

TRANSMITTAL LETTER

Enclosed for filing in the application referenced above are the following:

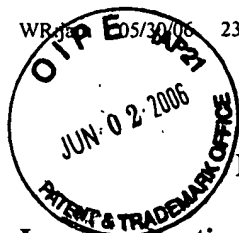
- ☒ Request for Corrected Filing Receipt
 - ☒ Exhibit A – Copy of incorrect Filing Receipt with correction shown in red ink
 - ☒ Exhibit B – Copy of first page of International Publication No. WO 2004/104140 A1 (International Application No. PCT/US2004/015402)
 - ☒ Exhibit C – Copy of Combined Declaration and Power of Attorney
- ☒ The Director is hereby authorized to charge any additional fees that may be required, or credit over-payment, to Deposit Account No. 02-4550. A copy of this sheet is enclosed.
- ☒ Please return the enclosed postcard to confirm that the items listed above have been received.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

By *Wayne W. Rupert*
Wayne W. Rupert
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Attorney or Agent
for Applicant(s)

Greg A. Whyatt

Date Mailed May 30, 2006

COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

REQUEST FOR CORRECTED OFFICIAL FILING RECEIPT

Applicants have received a Filing Receipt dated May 11, 2006 for the application referenced above, a copy of which is attached as Exhibit A, with requested correction shown in red ink.

Applicants note that the Filing Receipt incorrectly sets forth the Domestic Priority data as claimed by applicant by not including the claim of the benefit of the following three provisional applications from which the international application was based: Provisional Application No. 60/471,130 filed May 16, 2003; Provisional Application No. 60/471,286 filed May 16, 2003; and Provisional Application No. 60/546,107 filed February 18, 2004. The proper Domestic Priority data as claimed by applicant should read:

This application is a 371 of PCT/US04/15402 05/17/2004
which claims benefit of 60/471,130 05/16/2003
 60/471,286 05/16/2003
 60/546,107 02/18/2004

A copy of the front page of International Publication No. WO 2004/104140 (International Application No. PCT/US04/15402) showing the priority data listing the three provisional applications is attached as Exhibit B. A copy of the Combined Declaration and Power of Attorney, signed by the inventors, claiming the benefit of the three provisional applications is attached as Exhibit C. Page 1, lines 4-7, of the application as filed also includes the reference to the three U.S. provisional priority applications.

Applicants request that the identified errors be corrected and that a corrected official Filing Receipt be issued.

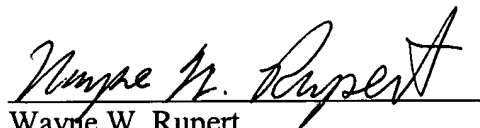
Please return the enclosed postcard to confirm that the items listed above have been received.

Please call the undersigned if any further information is required.

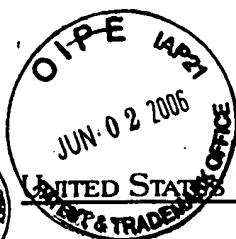
Respectfully submitted,

KLARQUIST SPARKMAN, LLP

By


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Pattillo/wR

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 Alexandria, Virginia 22313-1450
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APPL NO.	FILING OR 371 (c) DATE	ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	DRAWINGS	TOT CLMS	IND CLMS
10/551,516	09/28/2005	1764	1725	2370766-04	18	53	9

CONFIRMATION NO. 6020

FILING RECEIPT



OC000000018747154

32215
 KLARQUIST SPARKMAN, LLP
 121 SW SALMON STREET, SUITE 1600
 ONE WORLD TRADE CENTER
 PORTLAND, OR 97204

PREVIOUSLY DOCKETED

Date Mailed: 05/11/2006

Receipt is acknowledged of this regular Patent Application. It will be considered in its order and you will be notified as to the results of the examination. Be sure to provide the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION when inquiring about this application. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please mail to the Commissioner for Patents P.O. Box 1450 Alexandria Va 22313-1450. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections (if appropriate).

Applicant(s)

Greg A. Whyatt, West Richland, WA; ✓
 Christopher M. Fischer, Yakima, WA; ✓
 James M. Davis, Richland, WA; ✓

Power of Attorney: The patent practitioners associated with Customer Number 32215.

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/US04/15402 05/17/2004 ✓

which claims benefit of

Foreign Applications

Acceptable Request to Retrieve Priority Application Received?

▷ 60/471,130 05/16/03
 60/471,286 05/16/03
 60/546,107 02/18/04

Projected Publication Date: 08/17/2006

Non-Publication Request: No

Early Publication Request: No

** SMALL ENTITY **

Title

EXHIBIT

A

tabbies

Rapid start fuel reforming systems and techniques ✓

Preliminary Class

048

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER Title 35, United States Code, Section 184 Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR

1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
2 December 2004 (02.12.2004)

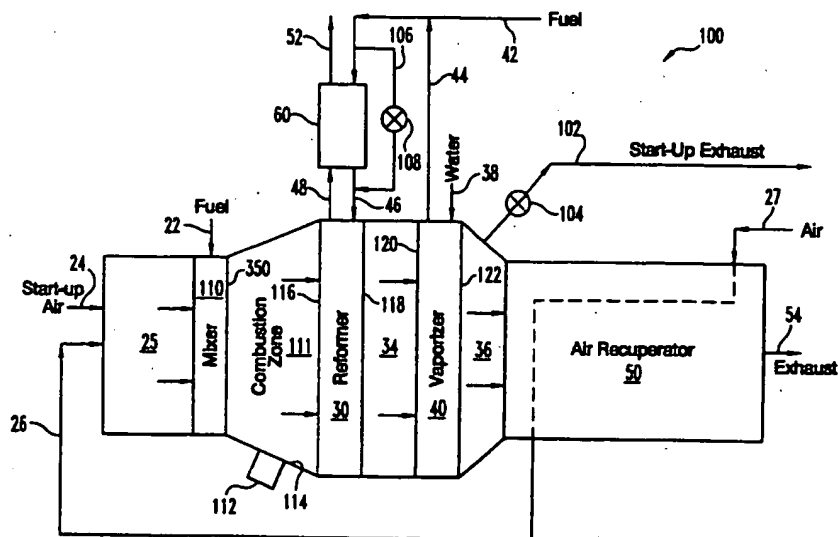
PCT

(10) International Publication Number
WO 2004/104140 A1

- (15) International Patent Classification⁷: C10J 3/00 James, M. [US/US]; 1309 Roberdeau, Richland, WA 99352 (US).
- (21) International Application Number: PCT/US2004/015402
- (22) International Filing Date: 17 May 2004 (17.05.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/471,130 16 May 2003 (16.05.2003) US
60/471,286 16 May 2003 (16.05.2003) US
60/546,107 18 February 2004 (18.02.2004) US
- (71) Applicant (for all designated States except US): BATTELLE MEMORIAL INSTITUTE [US/US]; P.O. Box 999, Richland, WA 99352 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): WHYATT, Greg, A. [US/US]; 3401 Equestrian Drive, West Richland, WA 99353 (US). FISCHER, Christopher, M. [US/US]; 5913 Terrace Heights Dr., Yakima, WA 98901 (US). DAVIS,
- (74) Agents: BRADSHAW, John, M. et al.; Woodard, Emhardt, Moriarty, McNett & Henry, LLP, Bank One Center/Tower, Suite 3700, 111 Monument Circle, Indianapolis, IN 46204 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

[Continued on next page]

(54) Title: RAPID START FUEL REFORMING SYSTEMS AND TECHNIQUES



(57) Abstract: An on-board fuel processor includes a microchannel steam reforming reactor (30) and a water vaporizer (40) heated in series with a combustion gas. The reformer (30) and the vaporizer (40) are both of a cross-flow panel configuration that allows for low combustion side pressure drop. Fuel is directly injected into the steam, and during a rapid cold start, both the gas flow rate and the steam to carbon ratio are substantially increased relative to their steady state operating values. A start can be achieved in under 30 seconds with a manageable amount of electric power consumption, removing impediments in automotive fuel cell applications.

EXHIBIT

B

COMBINED DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled **RAPID START FUEL REFORMING SYSTEMS AND TECHNIQUES**, the specification of which

- ☒ is attached hereto.
- ☐ was filed on _____ as United States Patent Application No. _____.
- ☒ was described and claimed in PCT International Application No. PCT/US2004/015402, filed on 17 May 2004, and as amended under PCT Articles 19 on _____ (if applicable).
- ☐ and was amended on _____ (if applicable).
- ☐ with amendments through _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. § 1.56. If this is a continuation-in-part application filed under the conditions specified in 35 U.S.C. § 120 which discloses claims and subject matter in addition to that disclosed in the prior copending application, I further acknowledge the duty to disclose material information as defined in 37 C.F.R. § 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) of any foreign application(s) for patent or inventor's certificate or of any PCT international application(s) designating at least one country other than the United States of America listed below and have also identified below any foreign application(s) for patent or inventor's certificate or any PCT international application(s) designating at least one country other than the United States of America filed by me on the same subject matter having a filing date before that of the applications(s) on which priority is claimed:

Number	Country	Day/Month/Year Filed	Claim Priority?
			<input type="checkbox"/> Yes <input type="checkbox"/> No

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below:

Application Number	Filing Date
60/471,130	16 May 2003
60/471,286	16 May 2003
60/546,107	18 May 2004

EXHIBIT

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C

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) or § 365(c) of any PCT international application(s) designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

Application Number	Filing Date	Status: patented, pending, abandoned
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I hereby appoint the practitioners associated with the customer number provided below to prosecute this application, to file a corresponding international application, and to transact all business in the Patent and Trademark Office connected therewith:

Customer Number 32215

I hereby grant the law firm of Klarquist Sparkman, LLP, the power to insert on this Combined Declaration and Power of Attorney any further information which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for submitting this document.

Address all telephone calls to Wayne Rupert at telephone number (503) 226-7391.

Address all correspondence to the address associated with **Customer Number 32215**, which address is:

Klarquist Sparkman, LLP
121 S.W. Salmon Street, Suite 1600
Portland, OR 97204

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Name of First or Sole Inventor:	Greg A. Whyatt
Residence:	West Richland, Washington
Mailing Address:	3401 Equestrian Drive, West Richland, Washington 99353
Citizenship:	United States of America

Inventor's Signature

Greg A. Whyatt

Date 9/22/05

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Residence:	Yakima, Washington	9/22/05
Mailing Address:	5913 Terrace Heights Drive , Yakima, Washington 98901	
Citizenship:	United States of America	
Inventor's Signature	<u>Christopher M. Fischer</u>	Date <u>9/22/05</u>

Name of Third Inventor:	James M. Davis	
Residence:	Richland, Washington	
Mailing Address:	1309 Roberdeau, Richland, Washington 99352	4 9/23/05
Citizenship:	United States of America	
Inventor's Signature	<u>JM Davis</u>	Date <u>9/23/05</u>